

INDIANA DEPARTMENT OF TRANSPORTATION  
MATERIALS AND TESTS DIVISION

VERIFYING CALIBRATION SETTINGS FOR SUPERPAVE GYRATORY COMPACTORS  
ITM No. 908-01T

**1.0 SCOPE.**

- 1.1** This test method covers the procedures for verifying calibration settings on an approved SUPERPAVE Gyratory Compactor (SGC).
- 1.2** The values stated in either acceptable English or SI metric units are to be regarded separately as standard, as appropriate for a specification with which this ITM is used. Within the text, SI metric units are shown in parenthesis. The values stated in each system may not be exact equivalents; therefore each system shall be used independently of the other, without combining values in any way.
- 1.3** This ITM may involve hazardous materials, operations, and equipment. This ITM does not purport to address all of the safety problems associated with the ITMs use. The ITM user's responsibility is to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

**2.0 APPARATUS.**

- 2.1** Digital Stopwatch, readable to 1 s
- 2.2** Dynamometer or load cell, National Institute of Standards and Technology (NIST) traceable.
- 2.3** Precision gage blocks
- 2.4** Angle indicating device

**3.0 SIGNIFICANCE AND USE.** This ITM is used by laboratory personnel to verify the calibration settings on an approved SGC.

**4.0 PROCEDURES.**

**4.1 GENERAL.**

- 4.1.1** Use the manufacturer's calibration equipment and procedures for verification of the speed of gyration, ram pressure, ram position, and angle of gyration.
- 4.1.2** Turn on the SGC and allow to warm up for approximately 15 min or the manufacturer's recommended time prior to verifying the calibration settings.
- 4.1.3** If any of the calibration settings are outside the specified tolerances of 9.0, then a new calibration shall be performed for all of the parameters.

**4.2 SPEED OF GYRATION.**

- 4.2.1** Set the SGC for 30 revolutions and start the machine.

**4.2.2** Record the time using the stopwatch and calculate the number of revolutions per minute.

**4.3 RAM PRESSURE.**

**4.3.1** Center the dynamometer or load cell under the ram.

**4.3.2** Flex the dynamometer, if used, to the maximum load that will be required during calibration.

**4.3.3** Apply a force with the SGC. The SGC will load the ram to several predetermined forces.

**4.3.4** Record the force indicated on the dynamometer or load cell and the corresponding force displayed on the control panel.

**4.4 RAM POSITION.**

**4.4.1** Insert the gage block(s) under the ram.

**4.4.2** Apply a force with the SGC. The blocks should be loaded through the full range of ram pressures.

**4.4.3** Record the height indicated on the control panel.

**4.5 ANGLE OF GYRATION.**

**4.5.1** Attach the appropriate indicator for determination of the angle of gyration.

**4.5.2** Verify that the base is level.

**4.5.3** Record the angle.

**5.0 TOLERANCES.**

**5.1** The speed of gyration shall be  $30 \pm 0.5$  rpm.

**5.2** The ram pressure shall be within  $\pm 3$  percent of the pressure indicated on the SGC.

**5.3** The ram position shall be within  $\pm 0.1$  mm of the height of the gage block(s).

**5.4** The angle of gyration shall be  $1.25 \pm 0.02^\circ$ .

SUPERPAVE Gyrotory Compactor Verification  
ITM 908

Model: \_\_\_\_\_ Serial No: \_\_\_\_\_

SPEED OF GYRATION: \_\_\_\_\_ (Required  $30 \pm 1/2$  RPM)

ANGLE OF GYRATION: (Required  $1.25 \pm 0.02^\circ$ )

Calculated Angle	Pass/Fail

[illegible]

Remarks: \_\_\_\_\_

Verified by: \_\_\_\_\_

Date: \_\_\_\_\_

Next Due Date: \_\_\_\_\_